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Case study: Stress, anxiety and depression

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Abstract
Stress and anxiety are often correlated but they are two distinct terms. Stress is a threat response in a situation. Anxiety is a reaction to the stress. Depression is a more serious and powerful form of stress and it requires professional help. Some stress can be good, as it helps us to focus better and achieve our targets more efficiently. But too much stress can have a bad effect on the body and can worsen certain symptoms or enlargen the diseases your body is posing. In this paper author concentrate on types of stress and how can we check stress.

Keywords: stress, anxiety, depression

Introduction
Stress is subjective. Therefore, what seems stressful to you may not be stressful to someone else. Stress affects your physical, social and mental health. The body responds to the stress mechanism by releasing hormonal chemicals which cause the heart beat to rise and the brain to work faster because of which you feel a sudden outbreak of energy. This response is natural. But stress should be temporary, after the situation has passed the body should go back to it's natural state. If this doesn't happen, stress can take a toll on your body.

Types of stress
1. Acute Stress
Acute stress is the most commonly occurring stress. And it isn't always negative. It's your body's reaction to an unexpected situation or an event. For example when riding a rollercoaster or experiencing a jump scare is an episode of acute stress.

2. Episodic Acute Stress
When the stress episodes occur repeatedly, it is termed as episodic acute stress. Individuals who tend to worry a lot or always see the negative aspects or become angry or tetchy very easily experience this kind of stress.

3. Chronic Stress
When acute stress lasts for long periods of time and doesn't go away it is termed as chronic stress. It can have a detrimental effect on your body.

Physical symptoms
- Low energy level
- Headaches
- Sleeplessness
- Frequent infections
- Feeling nervousness
- Excessive sweating

Emotional symptoms
- Becoming exasperated
- Feeling dazed
- Having difficulty in quieting yourself
- Breathlessness
- Low self-esteem
- Becoming antisocial

Instruments
1. Generalized anxiety disorder 7 (gad-7)
GAD-7 is used to measure the most common mental disorders. It is based on a cutoff point system. 5, 10, 15 are the scores given for mild, moderate and severe anxiety respectively. It is highly effective when screening panic attacks, PTSD and social phobia. It is adept in terms of reliability, criterion, construct and procedural validity.

2. Self compassion scale (SCS)
SCS examines the well being and the big 5 theory of a personality. Self compassion means being kind to oneself when stricken with grief, failure or angst. This instrument checks a person's level of self-compassion. Individuals are marked on a scale from 1(almost never) to 5(almost always) and the total score is calculated by adding all the sub scores. There are 6 scales that explicitly measure different aspects of an individual's level of self compassion.

3. Zung self-rating depression scale (ZSDS)
ZSDS model for depression, measures psychological and somatic symptoms linked to depression. The test consists of 20 questions which test the distinctive characteristics of

depression - the pervasive effect, the physiological equivalents, other reactions, and psycho-motor activities. Testees' reaction to positive and negative situations are noted.

4. C-reactive protein test (CRP)
C-Reactive Protein also called as CRP is a protein produced by the liver. When there is a sign of inflammation throughout the body the CRP level is risen. There are a group of proteins that go up in response called the acute phase reactants which further increase the inflammatory proteins called the cytokines. The cytokines are produced by the white blood cells. Therefore, measuring the CRP in the blood is a direct relation for stress measurement. To perform this test a blood sample is taken directly from the vein and the procedure is called venipuncture.

5. Erythrocyte sedimentation rate (ESR)
ESR or erythrocyte sedimentation rate. It is also called as "sed rate." This test is an indirect measure of inflammation in the body. The ESR rate is described as the time the red blood cells sediment in an hour of time. The red blood cells form stacks known as 'rouleaux' because they high in density, so the settling process happens fast. The inflammation is a marker of stress in the body. So checking of stress rate is possible by measuring the ESR rate.

6. State trait anxiety inventory (STAI)
The current edition is the Y form. STAI is used to quantify anxiety. It is used to identify between state anxiety, trait anxiety and thoughts of depression and anxiety. The STAI questionnaire consists of 40 questions which take no more than 10-20 minutes to complete. The test is available in different languages around the globe. The test has 20 items which are bifurcated into the S-Anxiety scale and the T-Anxiety scale. The response is generated on a scale of 1-4, with emphasis on frets, tension, foreboding and trepidation.

7. Post traumatic stress diagnostic scale (PDS)
Different stress and anxiety disorders can be checked upon using PDS. It is used by doctors to examine the presence of PTSD in patients who might have experienced an event capable of causing trauma. It takes 15 minutes to complete and includes a set of 49 questions. The rating is based on four different scales of PTSD diagnosis- Symptom severity rating, symptom severity score and the level of impairment of functioning.

8. Immune/inflammatory markers
It is experimentally observed that the psychological stress may enhance or suppress the production of immune functions. The rise or fall depends on the nature of the stressor and the immune variables. The psychological stress affects the cytokines and markers like IL-6. Production of higher stress leads to increased IL-6 levels and high anxiety leads to higher production of IFN-gamma and low production of cytokines.

9. Fear of negative evaluation (FNE)
FNE checks for malaise and uneasiness in social interactions. The test consists of 30 questions with true/false type of format. The testees are generally adults. The completion time is approximately 10 minutes. There is also a brief version of the FNE which consists of 12 questions with a 5-point scale as the marking scheme.

10. Heart rate variability test
The changes in the heart rate variability are measurement of overall stress load. Abnormalities in the heart rate are associated with cardiovascular diseases to diabetes to depression and other diseases where stress is the governing factor. The heart rate variability is a measurement of overall stress as it reflects the fight response.

- **Low variability:** The similar the heartbeats, the more stress you are under.
- **High variability:** The more variation in heart beats, the less stress you are under.

11. Cortisol test
Cortisol is a hormone your body releases when you are under stress. It is secreted by the adrenal glands and helps you respond to stress. A cortisol test can determine the condition of having too much or too little hormone present. If you have high level of cortisol there are high chances of you having Cushing's Syndrome. It can also check for Addison's disease which caused by having low level of cortisol.

Results and Discussion

- The most common mental illness affecting 40 million adults aged 18 every year is anxiety disorder.
- Anxiety disorders are treatable, but many shy away from receiving treatment.
- Anxiety disorders can be genetic or can be inculcated due to life events/situations.

Conclusion
Selection of a better instrument to assess stress, anxiety and depression, unless we are clear how we are defining the stress is difficult. Either in terms of the basic processes involved or in terms of level of cortisol the outcome might vary. Some doubt that level of cortisol isn't a valid indicator of the stress while some advocate its use. The best measure of stress is that instrument whose outcome varies with the level of defined stress.

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